

CLAIMS:

1. A gelled composition for use in agriculture, public hygiene or domestic hygiene, characterized in that it contains:

5 a) a first component which is present in an amount of from 0.5 to 99.99 % by weight and which comprises one or more active ingredients;

10 b) a second component which comprises one or more gellable dendrimers comprising a core and dendrons; and

15 c) a liquid, mineral or organic carrier.

2. The composition of Claim 1, characterized in that the first component is one or more active ingredients selected from the group consisting of a herbicide, a fungicide, an insecticide, an acaricide, a rodenticide, a nematicide, an insect repellent, a pest repellent, a plant growth regulator and an insect growth regulator.

20 3. The composition of Claim 1 or 2, characterized in that it contains one or more additional components selected from the group consisting of additives, adjuvants, anti-caking agents, colorants, thickeners, surfactants, antifoaming agents, detergents, alkalinizing agents, sticking agents, emulsifiers, dispersants, oxidants, corrosion inhibitors, attractants, and food substances.

25 4. The composition of any one of Claims 1 to 3, characterized in that the first component is present in an amount of from 5 to 70% by weight.

5. The composition of any one of Claims 1 to 4, characterized in that the second component is present in an amount of from 0.01 to 99.5% by weight.

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6. The composition of Claim 5, characterized in that the second component is present in an amount of from 0.1 to 60% by weight.

5 7. The composition of any one of Claims 1 to 6, characterized in that the one or more gellable dendrimers, when mixed with or solubilized in water in weight ratios of 1.5 and 98.5 respectively at a temperature of approximately 65°C provides a gelled product after 48 hours which does not run when placed as a cubic mass on a plane surface.

10 8. The composition of any one of Claims 1 to 6, characterized in that the one or more gellable dendrimers, when mixed with or solubilized in water in weight ratios of 1 and 1 respectively at room temperature provides a gelled product after 2 weeks which does not run when placed as a cubic mass 15 on a plane surface.

20 9. The composition of any one of Claims 1 to 6, characterized in that the one or more gellable dendrimers, when mixed with or solubilized in water in weight ratios of 1.8 and 98.2 respectively at a temperature between 40 and 65°C, followed by heating for 4 weeks at a temperature of approximately 60-65°C, provides a gelled product after 48 hours which does not run when placed as a cubic mass on a plane 25 surface.

10. The composition of any one of Claims 1 to 9, characterized in that the second component contains a neutral dendrimer, an ionic dendrimer or both a neutral dendrimer and an ionic dendrimer.

30 11. The composition of Claim 10, characterized in that the neutral dendrimer is a dendrimer whose terminal functions are selected from the group consisting of carboxylic acid

groups, phosphonic acid groups, sulphonic acid groups, sulphonate groups, sulphate groups, and amine groups.

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12. The composition of Claim 10 or 11, characterized in that the ionic dendrimer is a dendrimer whose terminal functions are selected from the group consisting of carboxylate groups, sulphonium groups, phosphonium groups, amidinium groups, guanidinium groups, and ammonium groups.

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13. The composition of Claim 12, characterized in that the terminal functions of the ionic dendrimer are selected from the group consisting of a

N-hydrazinocarbonylmethyl-N,N,N-trialkylammonium halide groups.

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14. The composition of Claim 12, characterised in that the terminal functions of the ionic dendrimer are selected from the group consisting of a
N-hydrazinocarbonylmethyl-N,N,N-trimethylammonium chloride group, a N-hydrazinocarbonylmethyl-N,N,N-pyridinium chloride group, and a
N-hydrazinocarbonmethyl-N,N,N-tri(n-propyl)-ammonium group.

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15. The composition of any one of Claims 1 to 14, characterized in that the second component comprises a dendrimer whose terminal functions are attached to the ends of the dendrons which make up the branches of the dendrimer either directly or by means of a connecting member, wherein said connecting member is composed of:

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- a) a hydrocarbon radical containing 2 to 50 atoms which is saturated or unsaturated, straight-chained or branched, substituted or unsubstituted, or
- b) a hydrocarbon radical which contains one or more hetero atoms selected from the group consisting of oxygen, sulphur, nitrogen, phosphorus and halogens.

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16. The composition of Claim 15, characterized in that the hydrocarbon radical contains 4 to 20 atoms.

5 17. The composition of any one of Claims 1 to 16, characterized in that the second component contains a dendrimer with bonds between atoms of the fifteenth column of the Periodic Table, the number of these bonds amounting to between 2 and 80,000.

18. The composition according to Claim 17, characterized in that the number of bonds amounts to between 20 and 20,000.

10 19. The composition according to Claim 17 or 18, characterized in that the dendrimer has bonds between phosphorus atoms and nitrogen atoms.

15 20. The composition of in any one of Claims 1 to 19, characterized in that the core of the dendrimer consists of 1 to 30 atoms and is selected from the group consisting of:

- a polyfunctional organic chemical group;
- a multivalent group;
- a hydrocarbon radical;
- a hetero atom radical;

20 a linear saturated hydrocarbon group which contains a heteroatom;

 a linear saturated substituted hydrocarbon group which contains a heteroatom;

25 a linear unsaturated hydrocarbon group which contains a heteroatom;

 a linear unsaturated substituted hydrocarbon group which contains a heteroatom;

 a branched saturated hydrocarbon group which contains a heteroatom;

30 a branched saturated substituted hydrocarbon group which contains a heteroatom;

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a branched unsaturated hydrocarbon group which contains a heteroatom;

a branched unsaturated substituted hydrocarbon group which contains a heteroatom;

5 a cyclic hydrocarbon group which contains a heteroatom;

a cyclic substituted hydrocarbon group which contains a heteroatom;

a polycyclic hydrocarbon group which contains a heteroatom; and

10 a polycyclic substituted hydrocarbon group which contains a heteroatom.

21. The composition of Claim 20, characterized in that the core of the dendrimer has a valency of between 2 and 20.

15 22. The composition of Claim 21, characterized in that the core of the dendrimer has a valency of between 3 and 10.

23. The composition of any one of Claims 1 to 22, characterized in that the dendrons of the dendrimer consist of groups selected from:

20 hydrocarbon radicals;

hydrocarbon radicals which contain hetero atoms selected from oxygen, sulphur, nitrogen, phosphorus and halides, and branched chains containing identical chemical motifs.

25 24. The composition of any one of Claims 1 to 23, characterized in that the dendrimer of the second component has a structure which has two types of insertion volumes.

25. The composition of Claim 24 characterized in the two types of insertion volumes comprise:

internal cavities of the dendrimer, whose dimensions are between 0.001 and 30 nm³, and

30 interstitial spaces of the three-dimensional structure of

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the gel whose dimensions are between 0.0005 and 50 μm^3 .

26. The composition of Claim 25, characterized in that the internal cavities of the dendrimer have diameters that are between 0.01 and 10 nm³.

5 27. The composition of Claim 25 or 26, characterized in that the interstitial spaces have dimensions that are between 0.001 and 20 nm³.

10 28. The composition of any one of Claims 1 to 27, characterized in that at least half of the active substance(s) is present in the interstitial spaces of the three-dimensional structure of the gel.

15 29. The composition of any one of Claims 1 to 28, characterized in that the liquid carrier or solvent which it contains is water, one or more organic solvents, or water and one or more organic solvents.

30. The composition of any one of Claims 1 to 29, characterized in that the composition releases some or all of the active ingredients in a progressive or controlled manner.

20 31. The composition of Claim 30, characterized in that the composition releases at least 50% of the active ingredients.

32. The composition of Claim 31, characterized in that the composition releases at least 80% of the active substance.

25 33. A process for preparing a composition as defined in any one of Claims 1 to 32, comprising the steps of:

- a) solubilizing a mixture which contains one or more active ingredients, one or more gellable dendrimers

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and a liquid, mineral or organic carrier, and
b) heating the mixture for 0.25 to 45 days at a
temperature of about 30-65°C.

34. The process of Claim 33 wherein the step of
5 solubilizing is conducted at a temperature between room
temperature and about 80°C.

35. The process of Claim 33 or 34 wherein the mixture is
heated for 0.25 to 45 days at a temperature between about 35
and about 40°C.

10 36. A process for preparing a pulverulent composition,
comprising the step of completely or partly removing the
solvent(s) from the composition of Claim 2.

15 37. A pulverulent composition for use in agriculture,
public hygiene, or domestic hygiene obtained by the process of
Claim 36.

38. The pulverulent composition of Claim 37,
characterized in that the pulverulent composition becomes the
gelled composition of any one of Claims 1 to 32 when mixed
with a solvent or a solvent mixture.

20 39. The pulverulent composition of Claim 37 or 38,
characterized in that it contains one or more adjuvants or
formulation additives.

25 40. The pulverulent composition of Claim 39 wherein the
one or more adjuvants or formulation additives are selected
from the group consisting of anti-caking agents, colorants,
thickeners, surfactants, antifoams, detergents, dispersants,
alkalinizing agents, stickers, emulsifiers, oxidants and
corrosion inhibitors.

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41. The pulverulent composition of any one of Claims 37 to 40, characterized in that the pulverulent composition contains active ingredients in an amount of between 2 and 99.99% by weight.

5 42. The pulverulent composition of Claim 41, characterized in that the pulverulent composition contains active ingredients in an amount of between 5 and 95% by weight.

10 43. The pulverulent composition of any one of Claims 37 to 42, characterized in that the pulverulent composition contains a dendrimer in an amount of between 0.01 and 99.5% by weight.

44. The pulverulent composition of Claim 43, characterized in that the pulverulent composition contains a dendrimer in an amount of between 0.5 and 50% by weight.

15 45. The pulverulent composition of any one of Claims 37 to 44, characterized in that the pulverulent composition releases some or all of the active ingredients progressively or in a delayed manner.

20 46. The pulverulent composition of Claim 45, characterized in that the pulverulent composition releases at least 50% of the active ingredients.

47. The pulverulent composition according to Claim 46, characterized in that the pulverulent composition releases at least 80% of the active ingredients.

25 48. Use of the composition of any one of Claims 1 to 32 and 37 to 47 to treat or protect crops.

49. The use of Claim 48, characterized in that the

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composition is used in amounts of between 0.001 kg/ha and 5 kg/ha.

50. Use of the composition of any one of Claims 1 to 32 and 37 to 47 to protect public or domestic hygiene.

51. The use of Claim 50, characterized in that the composition is used in amounts of between 0.1 and 200 g/m² of surface to be treated or to be protected.